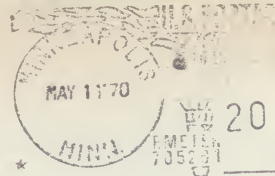


DICOMED CORPORATION

4600 West 77th Street
Minneapolis, Minnesota 55435
Telephone (612) 920-8980



First Class

A

ANOTHER **Datamation** READER INQUIRY
T NELSON SYS CONS
BOX 3
SCHOOLEYS MOUNTAIN
NJ 07870

DICOMED



DICOMED CORPORATION

4600 West 77th Street
Minneapolis, Minnesota 55435
Telephone (612) 920-8980



Thank you for your interest in "Photomation" and the DICOMED 30 Image Display. The enclosed literature will give you a general understanding of the DICOMED 30 Image Display and its capabilities.

Should you have further questions or would like to discuss a specific application, please contact the regional office listed below.

Sincerely,

DICOMED Corporation

Eastern Regional Office
DICOMED Corporation
8301 Arlington Blvd.
Fairfax, Virginia 22030

Telephone: (703) 573-4466

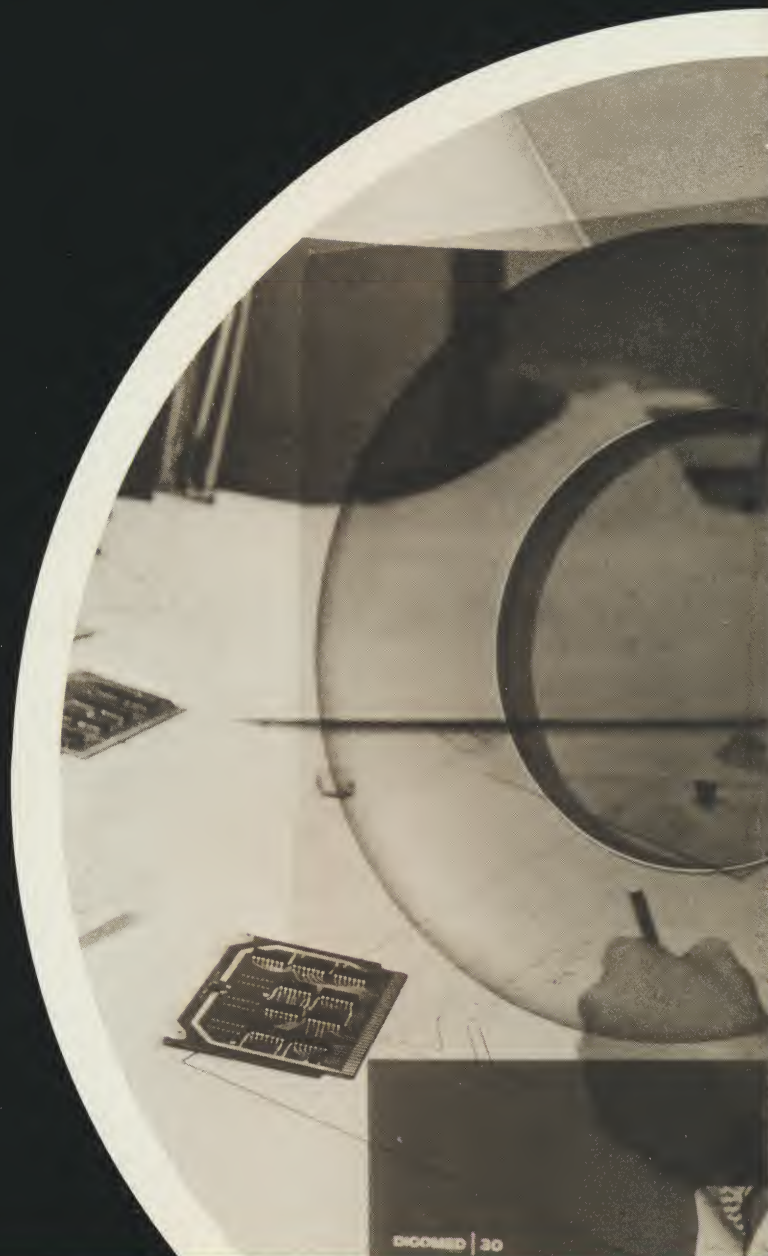
INSIDE
PHOTO MATION

THE
COMPANY
BEHIND
THE
BIRTH
OF AN
INDUSTRY

DICOMED

*CREATING THE AGE
OF PHOTOMATION*

In this highly mechanized and computerized age, technological advancements and improvements have become somewhat commonplace. New products are introduced almost daily. Even new companies are virtually an everyday occurrence. Yet, a truly rare thing is a technological breakthrough important enough to create an entirely new industry. DICOMED has made such a breakthrough with Photomation.





Photomation is an outgrowth of the computer industry. The computer evolved and grew in accordance with the need to automate statistical data. Photomation is the automation of *pictorial* data or images, and DICOMED Corporation has developed the first technology to make it practical.

We have titled this brochure "Inside Photomation". It is a brief look inside DICOMED, the new company that has given birth to an industry.

DICOMED



THE COMPANY

In many areas of business today, there exists a great need to deal efficiently with quality pictorial data. DICOMED began operations in January 1969 to fill that need. We are accomplishing this by producing the very first Photomation system.

The technology to attack some of the problems inherent in the processing of images has existed previously. Yet, no device existed that could recreate an image with enough speed and accuracy to make a photomation system practical. Until DICOMED created its first product . . . the DICOMED 30.



The DICOMED 30 Image Display is a unique CRT device for recreating photographic images. Other attempts have been made at reconverting digital data to pictures, but the DICOMED image display is the first practical output device with regard to time, accuracy, and cost.

In addition to the image display, DICOMED is currently manufacturing an image digitizer. This device converts pictorial information to a computer compatible digital format. Both products will be used in on-line and off-line Photomation systems.

PHOTOMATION

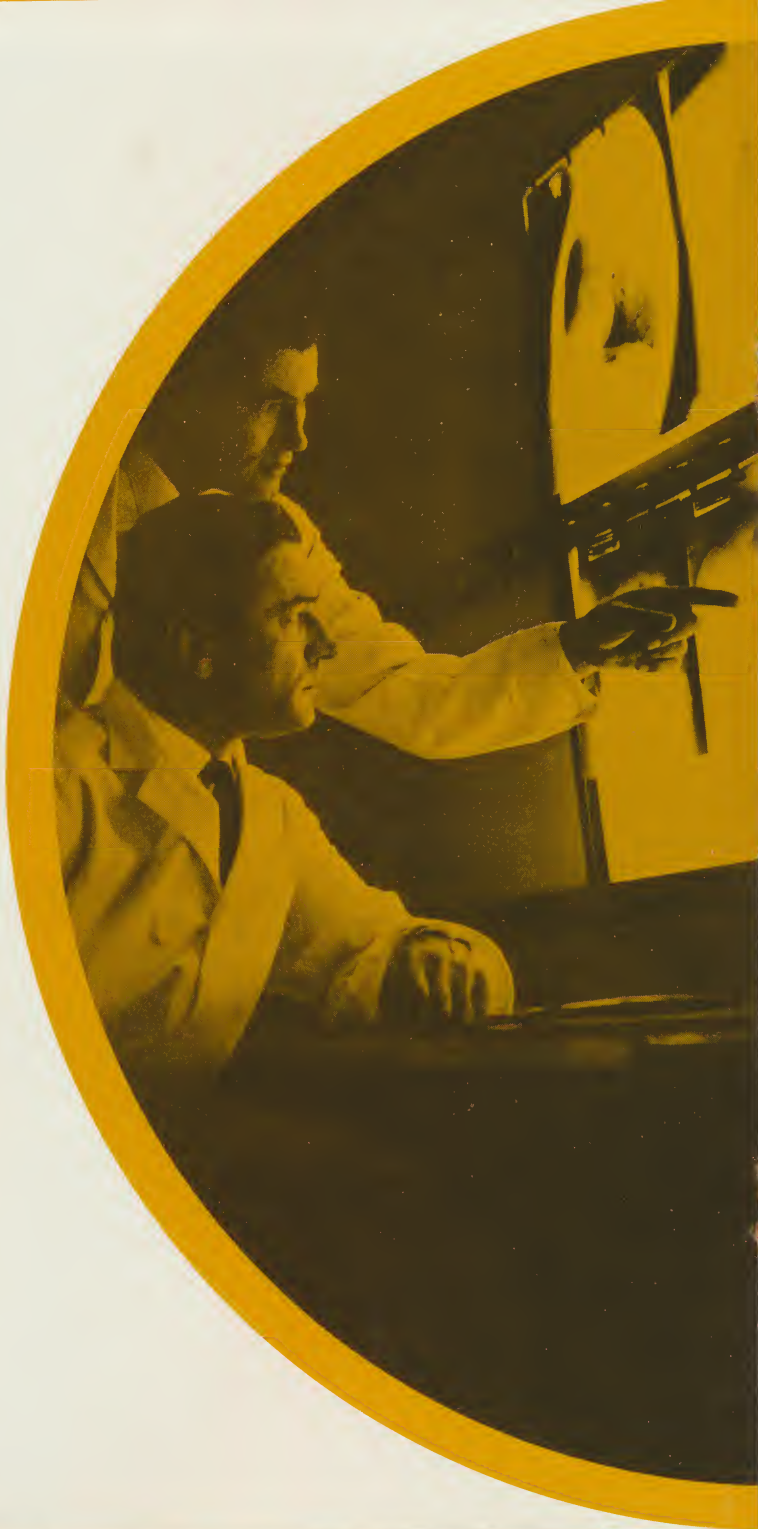
WHERE THE NEED EXISTS

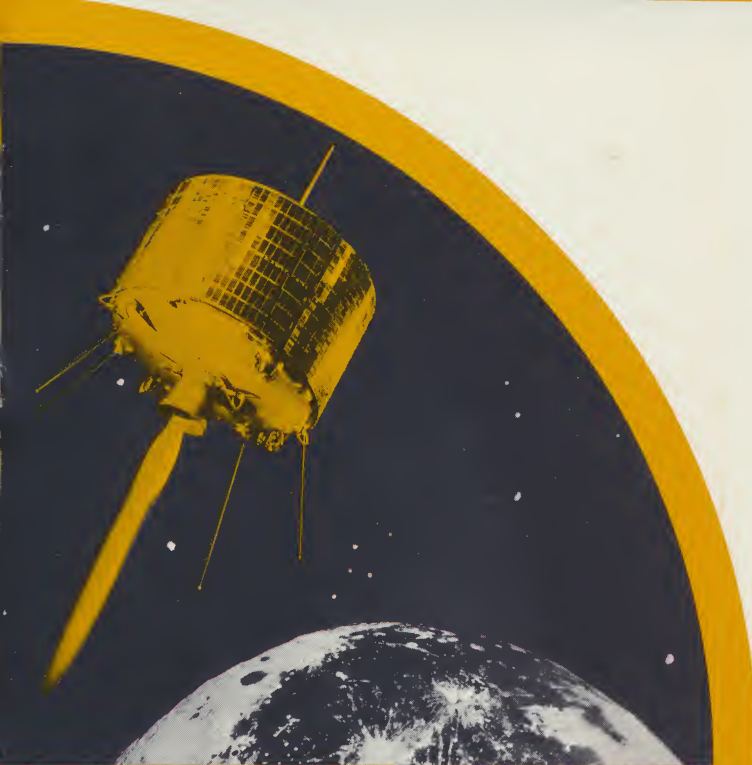
The demand for equipment to process words and numbers is equalled by the need to process pictorial data. The demand for DICOMED Photomation equipment exists anywhere people need clear, accurate reproductions of pictures, or where reproductions of high density text information has to be transmitted over long distances quickly.

In the medical field the need is critical. Words could never replace pictures in describing the internal condition of the human body. The ability of Photomation equipment to deal in digital representations of X-rays allows widespread use of the computer as a diagnostic tool. The accuracy retention inherent with digital information permits transmission of pictures with virtually no loss of fidelity.

Successful law enforcement work hinges to a great extent on the ability to properly identify people. Because pictures are a prime identifier, the need exists to transmit images as quickly and accurately as possible. Law enforcement agencies realize this need and have tried less efficient methods of picture processing. Photomation fills their need for speed and accuracy. And it's a system that is as economical as it is efficient.

Space exploration is a field where Photomation is vitally needed. Some of the most important information returned to Earth is useable only when converted to pictorial form. Yet, the high resolution film systems used in these projects take most of a 24 hour day to display a single image. And since these images were being enhanced by a computer, the ability to see the pictures





Det. Sgt. J. S.

Bureau, Clerical Division by:

ed by Furdsvill

Bureau by: Det. D.

Det. Lt. H. WAL

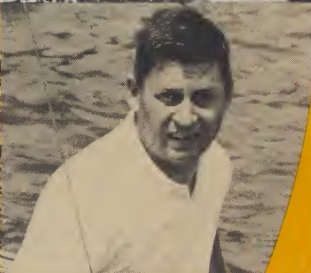
ition To City

4/1 1970 Time 1

ook case to Court Patrol

ative

Yes () No ()



in real time was a critical need. Photomation fills this need by its ability to reconvert digits into accurate pictures in real time.

The field of communications is continually absorbing new technology. The ability to send the written word over telephone lines has been a great stride. Now comes Photomation. It greatly expands the overall communications area with its ability to transmit pictures over telephone lines for immediate viewing with virtually no loss of accuracy.

Aerial photography is an area that requires accurate pictures. The use of the computer and the ability to transmit images are two of the great needs in this application. Photomation fills these requirements, and offers accuracy never before possible in reproducing this kind of pictorial information quickly.

Information storage and retrieval systems such as those employing microfilm have emerged as an area where Photomation has tremendous application. Systems can be set up that will locate data stored on microfilm, scan it, then transmit and display the microfilm image at any location. Whether the application is remote or in-house, Photomation offers the advantage of low cost telephone communication as compared to expensive micro-wave or closed TV hookup. And because it delivers a higher resolution, Photomation has the ability to display more text information and a better quality pictorial image than present CRT's.

Other applications for Photomation equipment continue to materialize. Our frontier is virtually limitless. Photomation solves problems anywhere people need to look at clear, accurate images in real time. Photomation will touch everyone.

DICOMED

HOW AND WHY IT WORKS

"Our engineers have the ability to wear two hats, and know precisely when to change them . . ."

Our first product, the Dicomed 30, took less than one year from idea to delivery. Our engineers had a big part in this. It all began on paper. Designing. Analyzing. Redesigning. Reanalyzing. The Dicomed approach to engineering a product of this kind demanded great versatility from our people. The reason for Dicomed's continuing success in Research & Development was evident in the building of our first prototype. It worked the very first time we pushed the start button.

Sixty days of close analysis followed. Successful testing of the Dicomed 30 dictated that we were ready to switch from R & D to the product development phase. This is where continued, careful attention to detail counted. And paid off. When the first pre-production unit emerged, it was almost deliverable. A few minor corrections, and we had a model that exceeded all specifications.

The ability to do it right the first time in design and R & D is saving countless customer dollars.

"In most companies mechanical engineering takes a back seat to electronic engineering. At Dicomed it has equal status, and operates with an eye to production as well as electronic design."

Mechanical design is a very important process in the creation of any product. Putting all the components in the right places means more efficient equipment at a lower operating cost.





DICOMED's mechanical engineers arrange the electrical parts with an eye to serviceability and manufacturability. As an arm of the manufacturing department they have the freedom to be creative designers, which means a more efficient machine at less manufacturing cost.

"We think enough of quality to change Quality Control to Quality Assurance. And Quality Assurance reports directly to the president . . ."

DICOMED's Quality Assurance group is unlike most others. In addition to competent inspectors, we have another way of assuring that our products are built right. Our quality engineers have the freedom and initiative to anticipate problems, and the creativity to find new techniques to prevent them.

But most of what Quality Assurance does isn't quite as popular. Like when we pulled the plug on our first product delivery, because "things weren't quite right." Everyone worked through the night to treat the cause rather than the symptoms. And it paid off. Our first product installation has worked near perfection since delivery.

"Much of our success can be traced to our corporate objectives. Living up to them as best we can from day to day makes our work more meaningful and rewarding . . ."

DICOMED

STANDARDS OF OUR BUSINESS

That we will design, develop, produce, market, and service high quality products which have high *CUSTOMER* value and which are made available to the *CUSTOMER* at fair prices for such quality and value.

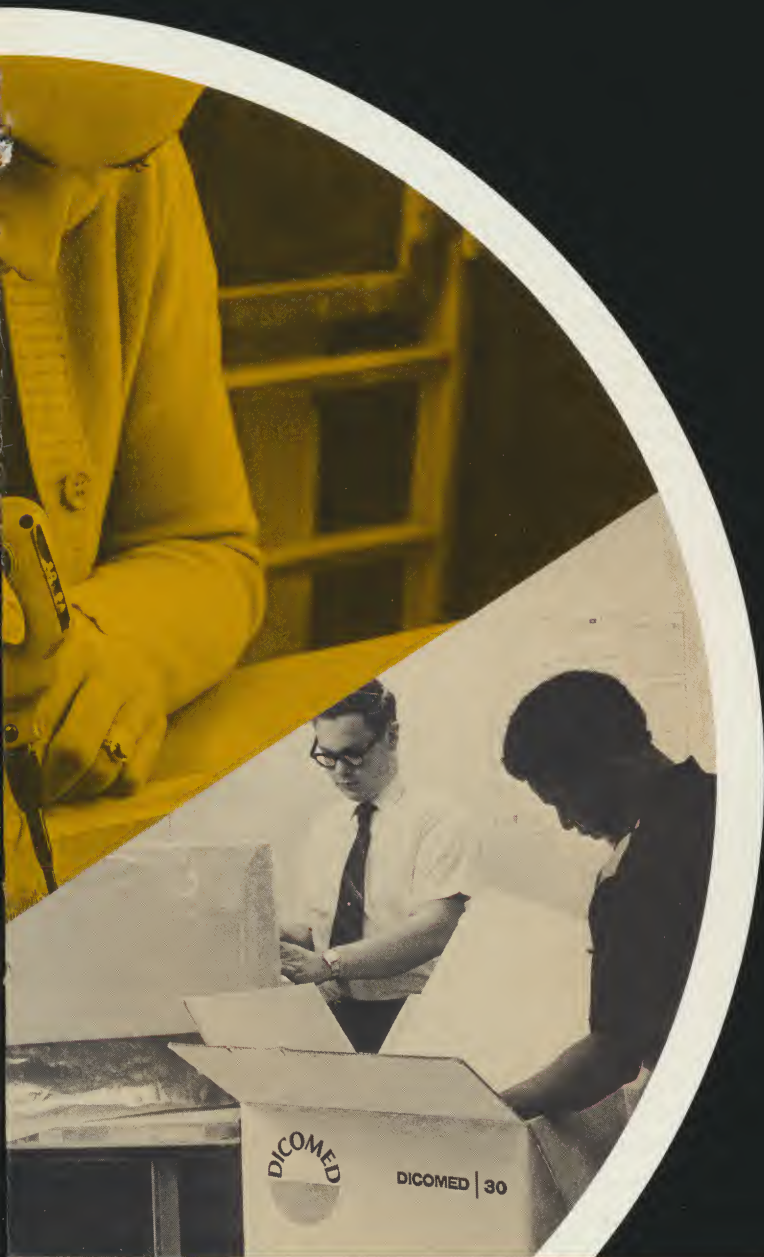
That we will continually strive to enhance the *STOCKHOLDERS'* investments and pride of ownership and to provide attractive returns on these investments through sound and effective business management.

That we will provide a working environment in which each *EMPLOYEE* will have an opportunity to grow to his maximum potential through diligent and effective personnel management practices based upon performance as the standard for appraisal without regard to race, color, or creed.

That we will conduct our business in a manner which will justify the confidence of the *GENERAL PUBLIC* in the quality of our products and services and in the integrity of our business affairs.

That we will conduct business with all *SUPPLIERS* through courteous, honest, and fair treatment in a way that is profitable and satisfying for them.





That we will seek to gain the respect of our *COMPETITORS* through the practice of our business ethics.

That we will strive to be a responsible corporate citizen of our *COMMUNITY* through a responsible recognition of the social welfare and social economic needs of all of its members.

DICOMED as a company can best be characterized by our spirit. Our people complement each other rather than compete. Long-range planning helps keep our people out of the serious predicaments that create heroes and goats. Yet achieving the goals we have laid out makes heroes of us all. Because our goals are milestones for which to measure our success.

You might call us aggressive marketers. The consistent upward readjustment of our objectives reflects this. And most of this reevaluation and readjustment comes from the lessons we learn in the market place.

That's why we'll be heard for years to come. The technical innovation that created Photomation is a beginning rather than an end. We fully intend to enrich much more of your life than the small portion we have touched with Photomation. Watch for us.

DICOMED CORPORATION

7600 Parklawn Ave.
Minneapolis, Minnesota 55435
(612) 920-8980



T.M.

THE CIRCULAR PICTURE IS AN ACTUAL UNRETOUCHED
PHOTOGRAPH OF AN IMAGE DISPLAYED ON THE CRT
SCREEN OF THE DICOMED 30, DEMONSTRATING THE
ACCURACY OF REPRODUCTION



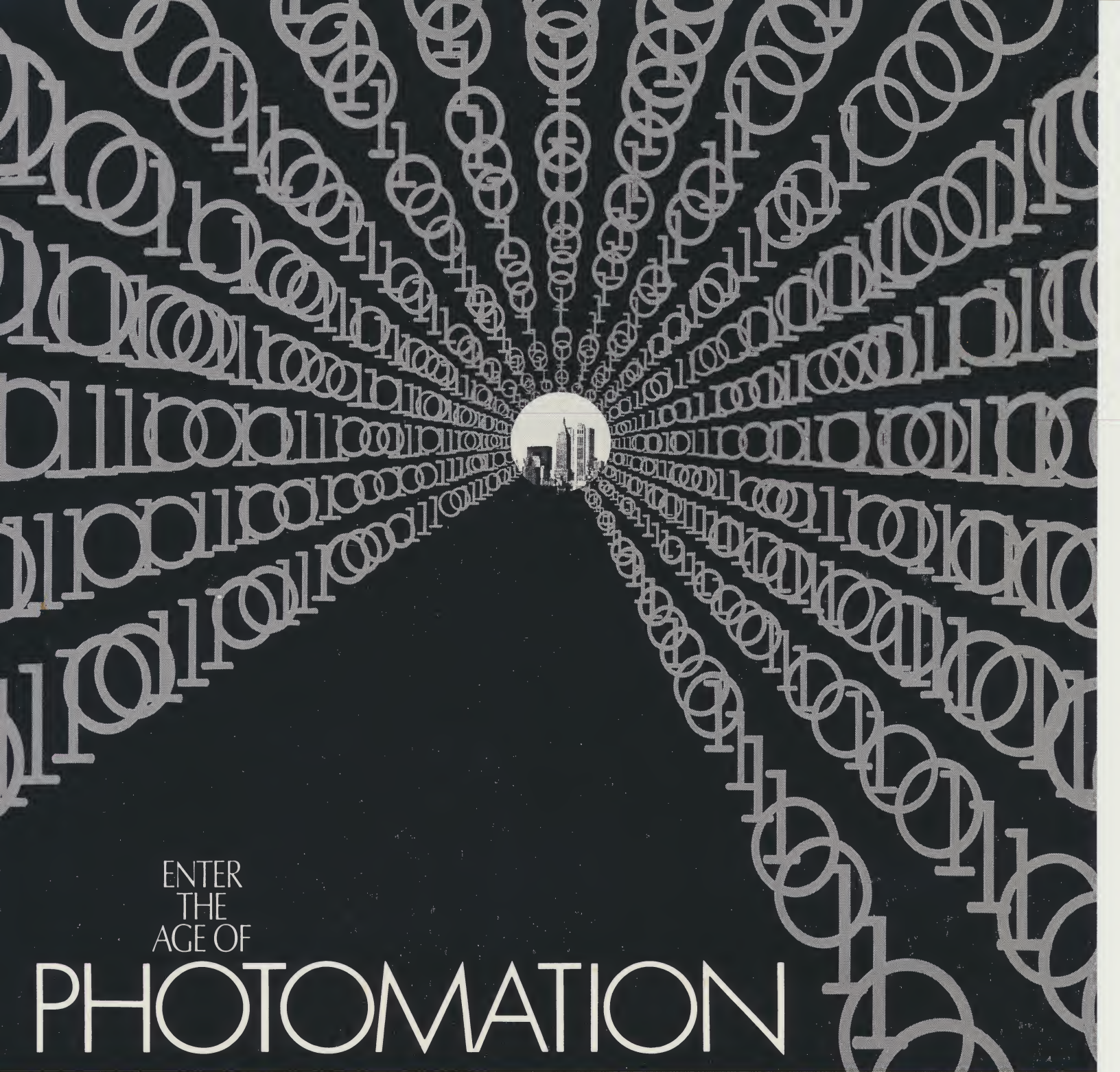
DICOMED CORPORATION

Pentagon Office Park

4600 West 77th Street

Minneapolis, Minnesota 55435

Phone: 920-8980



ENTER
THE
AGE OF

PHOTOMATION

Consider all that the digital computer has accomplished in the automation of words, numbers and lines. Now it's possible for pictures.

Photomation is the automation of half-tone photographic images for transmission over telephone lines. Or for computer enhancing a reproduction to better quality than the original picture. Or for storage and retrieval.

The DICOMED 30 Image Display makes photomation possible. And practical.

It's a direct view CRT with a resolution of over one million points, each with 64 intensity levels.

This is *not* television. It's much more.

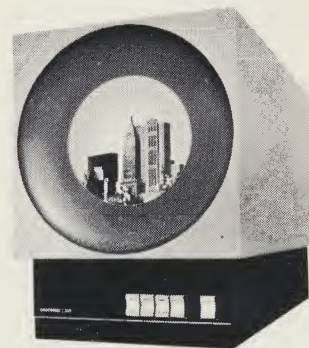
The DICOMED 30 needs no refreshing. It doesn't fade or flicker. Your picture stays solid as a print until you erase it.

This is *not* a film device. Digital film output takes most of a 24-hour day. The DICOMED 30 displays your picture immediately.

Photomation offers the advantages of TV and film without the drawbacks. And it costs far less than either.

Reproduce accurate pictures when and where you want them.

Write, or call (612) 920-8980.



BIRTH
OF AN
INDUSTRY



DICOMED CORPORATION Dept. B103/4600 W. 77th St./Minneapolis, Minn. 55435

Specifications

THE DICOMED 30 IMAGE DISPLAY

The DICOMED 30 Image Display is a high resolution direct view CRT display. The pictorial output is available for viewing within seconds and remains until erased without being refreshed. With appropriate interface the DICOMED 30 Image Display can be coupled directly to a computer, digitizer, storage device, or communication device.



PRESENTATION

Resolution — 1024 x 1024 coordinate matrix

Viewing Area — Circular, 8" in diameter

Point Intensity — 64 separate levels

Contrast Ratio — 3:1 minimum

Background Illumination — 20 foot-lamberts

Image Storage Time — One hour typical

Test Pattern — Internally generated

Image Generation — 80 seconds typical, 100 seconds maximum, when not limited by interface speed

Image Erase — 15 seconds typical, 20 seconds maximum

Image Overlay — Positioning repeatability $\pm .005$ inch

CONTROLS AND INDICATORS

All operational controls are push buttons.

Power On-Power Off — Permits application and removal of primary power.

Operate-Test — The operational mode permits the equipment to receive data, while the test mode may be used for test and maintenance purposes.

Normal-Complement — Permits the image to be generated as a photographic positive or a photographic negative.

Viewlight-Light Off — Controls the background illumination source.

Request-Erase — Permits images to be requested from connected equipment and the erasure of current images.

Image Waiting Indicator — Illuminates after receiving the proper command code from connected equipment indicating that an image can be requested by the display.

COMMANDS

EXTERNAL INITIALIZE (command code = 000) — This prepares the display for normal operation under operator switch action or an interface command.

START OF INPUT (command code = 001) — This code enables the display to receive input data.

END OF INPUT (command code = 004) — This code causes the display to recognize end of transmission.

IPI SELECT (command code = 005) — This code causes the display to set its logic for the reception of single byte data formats.

HRE SELECT (command code = 006) — This code causes the display to set its logic for the reception of dual byte data formats.

ERASE (command code = 200) — This code initiates the display's erase cycle.

IMAGE NORMAL SELECT (command code = 201) — This code causes the image intensity data to be uncomplemented.

IMAGE COMPLEMENT SELECT (command code = 202) — This code causes the image intensity data to be complemented.

STATUS

ERASE COMPLETE (status code = 200) — This code is a result of a timing operation within the display. Initiated in response to the erase command, it notifies connected equipment that the image display has completed its erase cycle.

RASTER END (status code = 203) — A logic condition within the display generates this code. When image generation has reached the last point of the writing surface, the code notifies a connected equipment.

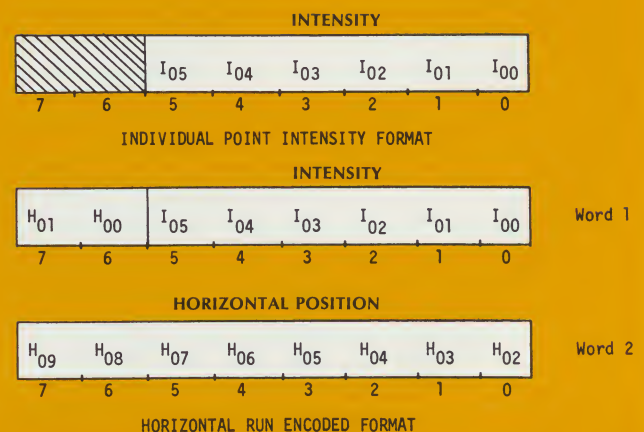
IMAGE REQUEST (status code = 204) — This code is generated by the display's request switch. It notifies a connected equipment that the display is requesting an image.

DATA FORMATS

When data is received from either a computer or image digitizer, the image is constructed in either an Individual Point Intensity (IPI) format or a Horizontal Run Encoded (HRE) format. The Data words for each are shown to the right.

In the IPI format the position information is provided automatically by the display logic traversing the raster a point at a time for each intensity code transmitted. (One code for each point in the image.)

In the HRE format both an intensity code and a horizontal raster position are transmitted to the image display for each horizontal run where the intensity is constant.



PHYSICAL CHARACTERISTICS

Width14.5 inches
Height20.5 inches
Depth28.0 inches
Weight125 pounds

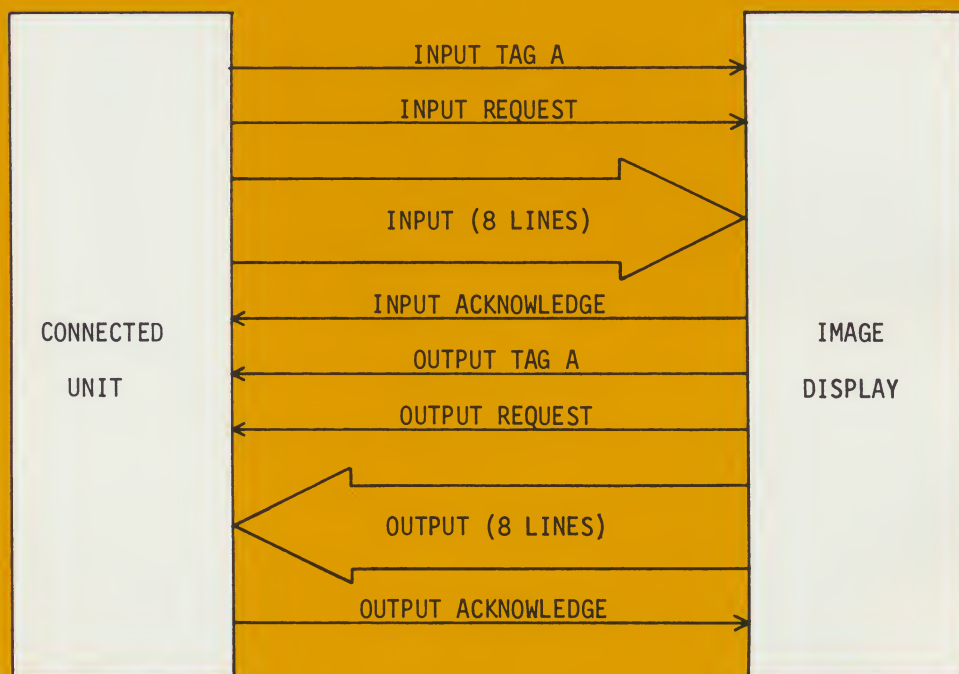
OPERATING CHARACTERISTICS

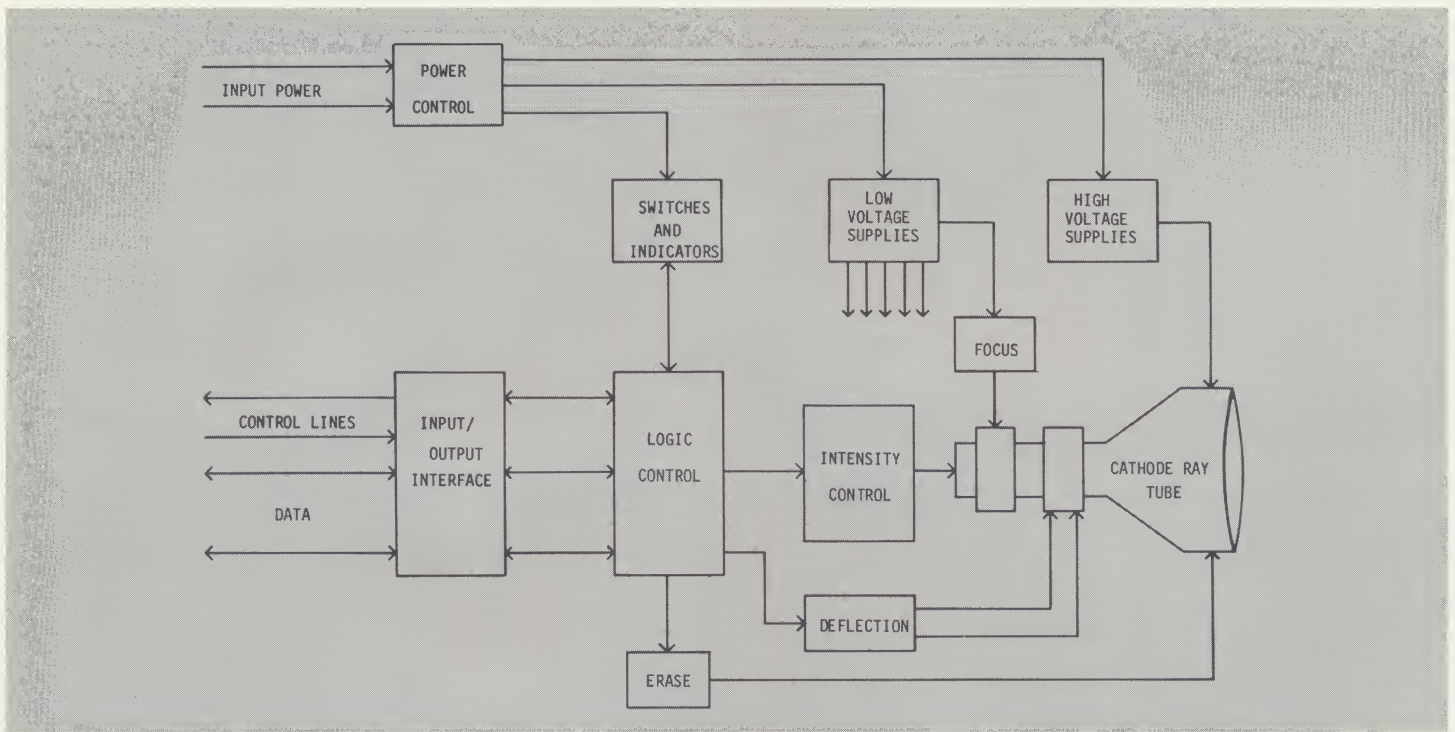
Temperature.....0° to 55°C
Humidity.....10 to 60 per cent relative
Power.....115 VAC \pm 10 per cent
50-60 Hertz
10 amperes max

INTERFACE

The DICOMED 30 has an 8 bit input word digital interface for receiving data and command codes from connected equipment. An 8 bit output word supplies status codes to connected equipment. Each interface has three control lines to permit a controlled exchange of data, commands, and status between the display and connected equipment.

Special digital (serial or parallel) interfaces can be supplied.





SAFETY

- Power interlock
- CRT implosion panel
- Terminal board covers
- 3 wire power cord with safety molded connector

EQUIPMENT RELIABILITY/DEPENDABILITY

- Solid state components
- Electromagnetic shields
- Overvoltage & CRT protection circuits

CONVENIENCE

- Front panel controls
- One interface cable
- Compact tabletop size
- Backlighted function indicators
- Computer or operator controlled
- Swing out assemblies and plug-in modules
- No operational adjustments required

DICOMED CORPORATION

4600 West 77th Street
Minneapolis, Minnesota 55435



© 1969

S301169